SANTA CRUZ BIOTECHNOLOGY, INC.

PABP (10E10): sc-32318

BACKGROUND

PABP, for Poly(A)-binding protein, is an essential, well-conserved, multi-functional protein involved in translational initiation, mRNA biogenesis and degradation. PABP is required for the shortening of the 3' poly(A) tail of eukaryotic mRNA and translation initiation. The interaction between PABP and eukaryotic translation initiation factor 4G (eIF4G) facilitates translational initiation of polyadenylated mRNAs. This interaction is mediated, at least in part, by eIF4G, which bridges the mRNA termini by simultaneously binding PABP and the cap-binding protein, eIF4E. With lower affinities, PABP can also associate with non-poly(A) sequences. The physiological consequences of these PABP/RNA interactions are far from clear but may include functions such as translational silencing. PABP is a modular protein, with four N-terminal RNA-binding domains and an extensive C-terminus. During poliovirus infection, cleavage of eIF4GII and PABP have been proposed to contribute to complete host translation shutoff. The human PABP gene maps to chromosome 8q22.3 and encodes a 633 amino acid protein.

CHROMOSOMAL LOCATION

Genetic locus: PABPC1 (human) mapping to 8q22.3.

SOURCE

PABP (10E10) is a mouse monoclonal antibody raised against recombinant human PABP.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PABP (10E10) is available conjugated to either Alexa Fluor® 546 (sc-32318 AF546) or Alexa Fluor® 594 (sc-32318 AF594), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-32318 AF680) or Alexa Fluor® 790 (sc-32318 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

PABP (10E10) is recommended for detection of PABP of human and *Xenopus laevis* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500); non cross-reactive with PABP of Drosophila melanogaster or mouse origin. PABP (10E10) is also recommended for detection of PABP in additional species, including bovine and canine.

Suitable for use as control antibody for PABP siRNA (h): sc-36169, PABP shRNA Plasmid (h): sc-36169-SH and PABP shRNA (h) Lentiviral Particles: sc-36169-V.

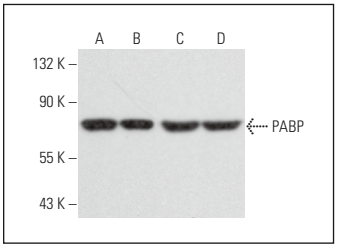
Molecular Weight of PABP: 70 kDa.

Positive Controls: NTERA-2 cl.D1 whole cell lysate: sc-364181, Hep G2 cell lysate: sc-2227 or A549 cell lysate: sc-2413.

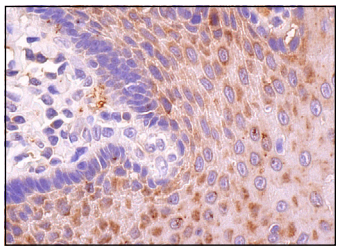
STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



PABP (10E10): sc-32318. Western blot analysis of PABP expression in NTERA-2 cl.D1 (**A**), A549 (**B**), MCF7 (**C**) and Hep G2 (**D**) whole cell lysates.



PABP (10E10): sc-32318. Immunoperoxidase staining of formalin fixed, paraffin-embedded human esophagus tissue showing cytoplasmic staining of squamous epithelial cells.

SELECT PRODUCT CITATIONS

1. Dang, Y., et al. 2006. Eukaryotic initiation factor 2α-independent pathway of stress granule induction by the natural product pateamine A. J. Biol. Chem. 281: 32870-32878.
2. Panas, M.D., et al. 2015. Methods for the characterization of stress granules in virus infected cells. Methods 90: 57-64.
3. Lyons, S.M., et al. 2016. YB-1 regulates tiRNA-induced stress granule formation but not translational repression. Nucleic Acids Res. 44: 6949-5960.
4. Sun, Y., et al. 2017. Newcastle disease virus induces stable formation of bona fide stress granules to facilitate viral replication through manipulating host protein translation. FASEB J. 31: 1337-1353.
5. Aulas, A., et al. 2018. Nitric oxide triggers the assembly of "type II" stress granules linked to decreased cell viability. Cell Death Dis. 9: 1129.
6. De Santis, R., et al. 2019. Mutant FUS and ELAVL4 (HuD) aberrant crosstalk in amyotrophic lateral sclerosis. Cell Rep. 27: 3818-3831.e5.
7. Sanders, D.W., et al. 2020. Competing protein-RNA interaction networks control multiphase intracellular organization. Cell 181: 306-324.e28.
8. Qifti, A., et al. 2021. Stimulation of phospholipase Cβ1 by $G_{\alpha q}$ promotes the assembly of stress granule proteins. Sci. Signal. 14: eaav1012.
9. Liu, L., et al. 2022. Arginine methylation of BRD4 by PRMT2/4 governs transcription and DNA repair. Sci. Adv. 8: eadd8928.
10. Asano-Inami, E., et al. 2023. The association of UBAP2L and G3BP1 mediated by small nucleolar RNA is essential for stress granule formation. Commun. Biol. 6: 415.
11. Yao, Z., et al. 2024. The divergent effects of G3BP orthologs on human stress granule assembly imply a centric role for the core protein interaction network. Cell Rep. 43: 114617.

RESEARCH USE

For research use only, not for use in diagnostic procedures.